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Abstract: In *Weyerhaeuser v. Ross-Simmons* the Supreme Court held that the predatory pricing standard adopted in *Brooke Group* also applies to predatory bidding claims, because the two types of predation are "analytically similar". I argue that predatory bidding is likely to be more harmful to consumer welfare than is predatory pricing. Successful input market predation may lead to a "dual market power" outcome in which the firm has market power in both the input and the output market. In spite of the analytical distinction, consideration of error costs leads me to conclude that *Brooke Group* remains the best standard to apply to predatory bidding claims.

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I. Introduction

In *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*,[1] the Supreme Court held that the plaintiff in a predatory pricing lawsuit must show that the price during the predatory campaign was cut below some relevant measure of cost and that there was a dangerous probability that the predatory firm would recoup the losses from its predation campaign.[2] In *Weyerhaeuser v. Ross-Simmons Hardwood Lumber Co*.[3] held that the standard adopted in *Brooke Group* also applies to predatory bidding claims.

A predatory bidding campaign is a lot like a predatory pricing campaign. Both involve a predation period in which the predator suffers a loss in an effort to drive a rival from the market, and a recoupment period in which the predator reaps monopoly rewards from excluding competition. The key difference is that in the predatory bidding scenario, the predator bids up the price of an input, while in the predatory pricing scenario, the predator cuts the price of its output.

The Ninth Circuit refused to apply the *Brooke Group* standard to the input market predation alleged in *Weyerhaeuser* on the ground that predatory bidding was more harmful to consumers than predatory pricing.[4] The Supreme Court reversed the Ninth Circuit, and held that the two types of predation are "analytically similar".[5]

I will argue here that predatory pricing and predatory bidding are analytically distinct in important respects.[6] In particular, predatory bidding is likely to be more harmful to consumer welfare than is predatory pricing. Successful input market predation may lead to a "dual market power" outcome in which the firm has market power in both the input and the output market. This potential reward lends a stronger push to the incentive to engage in input market predation.

In spite of the analytical distinction, I conclude that the *Brooke Group* test remains the best standard to apply to predatory bidding claims. The justification for the *Brooke Group* standard is based on a balancing of expected false acquittal

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[1] 509 U.S. 209 (1993).
[2] Id. at 222-24.
[3] 127 S. Ct. 1069 (2007)
[4] Id. at 1973. The Ninth Circuit said that predatory bidding and predatory selling "are materially different in that predatory bidding does not necessarily benefit consumers or stimulate competition in the way that predatory pricing does." Id.
[5] Id. at 1076.
[6] For earlier analyses of predatory pricing and predatory bidding, see Roger D. Blair & John E. Lopatka, Predatory Buying and the Antitrust Laws, forthcoming Utah L. Rev. (2008); John B. Kirkwood, Buyer Power and Exclusionary Conduct: Should Brooke Group Set the Standards for Buyer-Induced Price Discrimination and Predatory Pricing?, 72 Antitrust L. J. 625 (2005); Steven C. Salop, Anticompetitive Overbuying by Power Buyers, 72 Antitrust L. J. 669 (2005).

and false conviction costs.[7] The economic incentive arguments that indicate dissimilarities between predatory pricing and predatory bidding do not imply that the balance of error costs should be substantially different in the two predation scenarios. In other words, the incentive arguments are not sufficient to justify replacing *Brooke Group* with an alternative standard that is more favorable to plaintiffs in predatory bidding cases.

I agree with the Court's conclusion, though I would have reached it by a different route.[8] Instead of stressing the analytical similarity of the two types of predation, the Court should have put more emphasis on the error-cost rationale, and on identifying the costs of false convictions for input market predation. Bidding for inputs happens to be a substantial path through which information held by sophisticated buyers is communicated to prices. Convictions for predatory bidding threaten to obstruct the transmission of private information to markets.

II. *Weyerhaeuser*: The Facts

Few antitrust cases have facts as simple as this one. There are two players: Weyerhaeuser and Ross-Simons. Both operated hardwood lumber sawmills in the Pacific Northwest. Both purchased alder logs on the spot market as raw material for their lumber processing businesses. The output from their lumber processing operations was sold in the market for hardwood finished lumber. Thus, the relevant input market for this case was alder sawlogs (in the Pacific Northwest) and the relevant output market was hardwood finished lumber.

Ross-Simons began its operations in 1962. Weyerhaeuser entered the same market in 1980 and became the dominant firm, accounting for 65 percent of the purchases of alder logs available in the region by 2001.

From 1998 to 2001, the price of alder logs increased while prices for finished hardwood lumber fell. As a result, Ross-Simons suffered losses and shut down its mill in 2001. Ross-Simons then brought an antitrust suit against Weyerhaeuser for unlawful monopolization in violation of Section 2 of the Sherman Act. Ross-Simons claimed that Weyerhaeuser used its dominant position to drive up the

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[7] For a discussion of error costs and predation, see, e.g., Keith N. Hylton, Antitrust Law: Economic Theory and Common Law Evolution 214-219 (2003). For criticism of the error-cost approach adopted in Brooke Group, see Bolton et al., Predatory Pricing: Strategic Theory and Legal Policy, 88 Geo. L. J. 2239, 2242-62 (2000).

[8] In this general sense my view of the *Weyerhaeuser* decision is similar to that taken by Roger Blair and John Lopatka in their forthcoming article, supra note 6. The differences are in the details of the arguments. Blair and Lopatka explore the economics of buyer predation in greater detail (and with more care) than I do here, which leads them to identify weaknesses in the Court's approach. I am concerned primarily with the error cost rationale for the *Brooke Group* test, and that rationale's application to predatory bidding.

prices of alder sawlogs, and thereby exclude Ross-Simons from the (output) market in hardwood finished lumber.

After rejecting summary judgment and other motions based on Weyerhaeuser's effort to impose the *Brooke Group* standard on the trial court's analysis, the trial court eventually instructed the jury that Ross-Simons could prove Weyerhaeuser's bidding practices were monopolizing if "Weyerhaeuser purchased more logs than it needed or paid a higher price for logs than necessary in order to prevent Ross-Simons from obtaining the logs they needed at a fair price."[9] The jury found Weyerhaeuser guilty of monopolization. Weyerhaeuser appealed to the Ninth Circuit, which affirmed the verdict on the theory that "buy-side predatory bidding and sell side predatory pricing, though similar, are materially different in that predatory bidding does not necessarily benefit consumers or stimulate competition in the way that predatory pricing does."[10] The Ninth Circuit concluded that "the concerns that led the *Brooke Group* Court to establish a high standard of liability in the predatory-pricing context do not carry over to this predatory bidding context with the same force."[11]

III. The Court's Decision

The Court's decision in *Weyerhaeuser* is a simple and short rejection of the theory adopted by the Ninth Circuit. It is a mechanical description of the reasons why the concerns that led to the *Brooke Group* standard carry over to the predatory bidding context. The Court's argument consists of the following steps: first, a brief description of the analytical similarity between input and output market predation and its recognition by antitrust scholar; second, an accounting of the economic similarities between predatory pricing and predatory bidding, and finally a peremptory statement of the reasons that the *Brooke Group* standard should apply to predatory bidding. The interesting parts of the Court's argument do not appear until we get to the second and third parts of this argument.

In the second step of this mechanical argument the Court notes that in both the predatory pricing and predatory bidding contexts we observe two stages of the predation game: a predation period, in which the dominant predator suffers losses, and then a recoupment phase, in which the predator reaps the gains from excluding its competitors.

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[9] *Weyerhaeuser*, 127 S.Ct. at 1073. In his review of the 2006-2007 Supreme Court term, Josh Wright describes this jury instruction as "disastrous", see Joshua D. Wright, The Roberts Court and the Chicago School of Antitrust: The 2006 Term and Beyond, 3 Competition Policy International 25, 49 (2007). I agree with Wright's assessment. Such an open-ended standard invites a jury to apply a sense of fair play that may have been shaped by plaintiff's lawyers rather than a serious consideration of the economics of the case.

[10] *Weyerhaeuser*, 127 S.Ct. at 1073.

[11] Id. at 1073-74.

The Court also noted four procompetitive or efficiency motivations behind bidding up input prices or outbidding competitors: mistakes, differentiated impacts of product market demand shocks, greater productive efficiency on the part of the dominant firm, hedging against risk.[12]

The mistakes could be described as instances of the "winner's curse".[13] In a competitive bidding context, the firm that wins the contest is often the one that is most mistaken in overvaluing the asset to be acquired. There are strategic matters that could influence the size of the overbidding curse when the bidders are all using the asset to compete against each other in another market. But the curse could be observed in the absence of such strategic pressures – e.g., it could be observed when people are bidding for houses or antiques.

The Court's second procompetitive justification is that a firm might bid up prices to respond to increased demand for its product. The Court may have had the differentiated products setting in mind. In the case of homogeneous products, an increase in demand would ordinarily affect the bidding of all participants by the same amount. A differential effect in which one firm bids more than the other would be observed only if the firms are not equally informed about the demand increases, or their products are differentiated.

The productive efficiency rationale for bidding up the price of an input is observed in the case in which one firm is a more efficient user of the input than is the other firm. If firm A is a more productive processor of an input than its competitor, firm B, then the value of that input will be greater to firm A. Firm A will therefore outbid firm B in a spot market auction. The outbidding by firm A may have nothing to do with any strategy on the part of A to drive B from the market.

The last procompetitive justification the Court offered for outbidding is the case in which one firm purchases an amount that appears to be excessive as a hedge against the risk of future rises in input costs or input shortages. Of course, if the future cost increase or shortage impacts all firms in the upstream market in the same manner, each should be willing to bid as much as the other. Outbidding might be observed, however, when there is some informational asymmetry among the upstream competitors. If one firm predicts that a shortage will occur and the other does not, the relatively pessimistic firm will outbid its relatively optimistic competitor.

The second step of the Court's argument also includes a comparison of the benefits to consumers, during the first-stage predatory campaign, in the predatory pricing and predatory bidding settings.[14] If one compares the input suppliers in

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[12] Id. at 1077.

[13] For a straightforward description, see http://en.wikipedia.org/wiki/Winner's_curse. For a survey, see Richard H. Thaler, The Winner's Curse, 2 J. Econ. Perspectives 191 (1988).

[14] *Weyerhaeuser*, 127 S. Ct. at 1077-78

the bidding predation market with the consumer in the pricing predation market, the comparison would be appropriate. In the output price predation setting, predation offers a "boon to consumers"[15] as the output price is driven below the competitive level (marginal cost). In the input market, bidding predation offers an equivalent boon to input suppliers, as input prices are driven above competitive levels. The input suppliers in the predatory bidding context are the counterparts to the consumers in the predatory pricing context. If a straightforward analysis of social welfare were conducted, the same conclusions concerning the welfare effects of predatory pricing could be derived for the case of predatory bidding.

In spite of the neat analogy between consumers in the first stage of the predatory pricing campaign and suppliers in the first stage of the predatory bidding campaign, the Court chose to focus on ultimate consumers in both settings. The Court relegated its discussion of the benefits to suppliers to a footnote.[16] Having committed itself to a comparison of ultimate consumers in both settings, the Court could offer only weak claims about the benefits predatory bidding provides to consumers. The Court argued that since predatory bidding could take place in a setting in which the output market is competitive, it might occur without having any perceptible impact on consumers.

The third step of the Court's argument consists of what I have referred to as a peremptory application of *Brooke Group*.[17] Given the existence of procompetitive cases in which firms are outbid by their rivals for access to inputs, the Court held that the price-cost screen of Brooke-Group has to be applied to predatory bidding. In addition, the Court imposed the recoupment test on the same ground as in *Brooke Group*: as an additional screen to make sure that the cases that survive summary judgment are highly likely to involve real instances of predation.

IV. Basic Economics of Input Market Predation

As a backdrop for my discussion of the case, I should set out a few preliminary points on the economics of input market predation, and in particular on the exploitation of monopoly power. After setting out these preliminary points, I will return to the conflict between the Ninth Circuit and the Supreme Court on the consumer welfare effects of bidding market predation.

A. Economics of Market Power

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[15] *Weyerhaeuser*, 127 S.Ct. at 1077-78.
[16] Id. at 1077 n.4.
[17] Id. at 1078.

In the standard output market monopoly setting, the profit-maximizing monopolist chooses an output level such that

$$(1) \qquad p(1-\frac{1}{e_d}) = MC\ ,$$

where MC is the marginal cost of supplying the product, p is the product's price, and e_d is the market demand elasticity. It should be clear from (1) that the monopolist sets price above marginal cost ($p > MC$) and produces at an elastic portion of its demand curve ($e_d > 1$).

Suppose the firm has market power in both the input and output markets. The monopoly-pricing condition shown in (1) changes. Assume there is one variable (in the short run) input L. The profit-maximizing monopolist employs the input up to the point at which

$$(2) \qquad p(1-\frac{1}{e_d})MP_L = w(1+\frac{1}{e_L})\ .$$

In this equation, MP_L is the marginal product of the input factor, w is the price of the input, and e_L is the elasticity of supply for the input.

In the perfectly competitive case, the value of the input's marginal product is equal to the input price (i.e., $pMP_L = w$). In the dual market power scenario shown in equation (2), the output price is above the competitive level, reflecting the exploitation of output market power, and the input price is below the competitive level, reflecting exploitation of input market power.

Using the familiar Lerner index as a measure of market power exploitation, in the standard output market monopoly case

$$(3) \qquad L = \frac{p - MC}{p} = \frac{1}{e_d}\ .$$

The monopolist's ability to exploit its power is inversely related to the point elasticity of demand at its profit-maximizing output level. In the dual (input and output) market monopoly case, the equivalent version of the Lerner index is[18]

[18] For the derivation of equation (4), see Keith N. Hylton & Mark Lasser, Measuring Market Power When the Firm Has Power in the Input and Output Markets, 131-139, in ECONOMIC INPUTS, LEGAL OUTPUTS: THE ROLE OF ECONOMISTS IN MODERN ANTITRUST (Fred S. McChesney, ed., Wiley, 1998). For an alternative approach using the Lerner index, see Roger D. Blair & Jeffrey L. Harrison, The Measurement of Monopsony Power, 37 Antitrust Bull. 133 (1992).

(4) $$L_2 = \frac{p - MC}{p} = \frac{e_d + e_L}{e_d(e_L + 1)} \ .$$

If the firm has market power in the input market, but no market power in the output market, the dual market power Lerner index simplifies to:

(5) $$\frac{1}{(e_L + 1)} \ ,$$

which implies that the firm is more effective at exploiting the input market if $e_d > e_L + 1$ (evaluated at the profit-maximizing quantities). Thus, if given a choice, the firm might prefer to exploit its input market rather than its output market.

Notice that the dual market power Lerner index can be decomposed as follows:

(6) $$L_2 = \frac{1}{e_d} + \frac{1}{e_L + 1} - \frac{1}{e_d(e_L + 1)} \ ,$$

which is the sum of the Lerner indexes for the output monopolist and the input monopsonist with an interaction term (equal to the product of the two single power indexes) subtracted off. The dual market power firm does not go as far in exploiting its power in either market as would the pure monopolist or the pure monopsonist. To do so would generate the familiar "double marginalization" inefficiency that is observed when successive monopolists interact.[19] The firm wisely takes into account the fact that a cut in output will also lead to some surplus recoupment in the input market, and therefore cuts output less aggressively than does the pure monopolist.

Even though the dual market monopolist cuts output less aggressively than does the pure monopolist, the harmful welfare effects of its exploitation are more severe. Since L_2 is greater than L, the effective price wedge relative to competition is greater in the dual market power case than in the single market monopoly case.

B. Implications for Predation

We can use the foregoing results on monopoly pricing and the Lerner index to compare the welfare implications of output market and input market predation. In

[19] Joseph J. Spengler, Vertical Integration and Antitrust Policy, 58 J. Pol. Econ. 347 (1950).

addition, the comparative implications for consumer welfare offer insights on the proper legal standards for predation in output and input markets.

First, the monopoly pricing results confirm the Court's suggestion that a firm may engage in input market predation in order to achieve monopsony power even if the firm sells in a perfectly competitive output market.[20] In the case in which the output market is perfectly competitive, the elasticity of demand for the firm's output (e_d) will be infinite, so it will not be able profitably to set its output price above the competitive level. However, if the firm can acquire monopsony power, it will be able to gain by pushing the input price below the competitive level after achieving monopsony, and this provides an incentive to the firm to engage in input market predation even when the output market is competitive.

Second, the monopoly pricing results imply that when input market predation is part of a strategy to achieve dominance in the output market, the welfare costs of input market predation are greater than those of output market predation. The reason for this is that input predation, when used successfully as a part of a strategy to achieve an output market monopoly, results in dual market power. Other things being equal, dual market monopoly is more harmful to welfare than simple output monopoly. This conclusion follows from the fact that the Lerner index for the dual market monopolization case is larger than the Lerner index for the single market standard monopolization case, which implies that the wedge between the firm's price and the competitive price is greater in the dual market power setting.

Putting these two observations together, we arrive at a somewhat different position from that taken by the Supreme Court in *Weyerhaeuser*. The Court could not see a persuasive reason to view input market predation as more harmful to consumers than output market predation. The implication of this analysis is that input market predation is distinguishable on welfare grounds from output market predation. In particular, input market predation, when it has the potential to enhance output market dominance, is likely to be more harmful to consumer welfare than is the standard case of output market predation. And since input predation will often have the potential to enhance output market power, it seems reasonable to view input predation as especially worrisome.

It should be clear that the *Brooke Group* standard needs to be modified in the input predation scenario, since a firm may have an incentive to engage in input market predation even when the output market is competitive. The dangerous – probability prong of the *Brooke Group* standard should examine the prospects to achieve monopsony power in the input market as well as monopoly power in the output market. Although the Court did not say this explicitly in *Weyerhaeuser*, this is implicit in its discussion of the dangerous probability test.

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[20] *Weyerhaeuser*, 127 S. Ct. at 1078.

The bigger question is whether the "basic economic analysis" of the preceding part implies that the *Brooke Group* test should be replaced by a test that is more favorable to plaintiffs in the input market predation scenario. I will explore this in more detail below.

V. Error Costs and the Predation Standard

A. Inadequacy of Incentives Analysis

The basic economic analysis suggests, contrary to the Court's view, that input market predation is distinguishable from output market predation in terms of its welfare effects, and that those effects imply that input market predation tends to be more costly to consumer welfare. One might argue that this supports the Ninth Circuit's view that the *Brooke Group* standard is inappropriate for input predation.

However it does not follow immediately, from the observation that input market predation is potentially more harmful than output market predation, that the standard of *Brooke Group* should be altered to permit plaintiffs to pursue predation claims more easily. The case for the *Brooke Group* standard is not based solely on an examination of the economic incentives for predation. It is based largely on "error cost" considerations.

Under the error cost (or decision theoretic) approach, the standard in *Brooke Group* is justified in light of the relative costs of false convictions and false acquittals. In the output market predation context, false acquittals leave a dominant firm intact and unregulated by the antitrust laws. That firm, however, is still subject to competitive pressures which regulate its freedom to exploit its market power.[21] On the other hand, false convictions for predatory pricing punish firms for making competitive decisions that are essential for a competitive economy to function. If firms worry about the risk of punishment every time they cut their prices, price cuts will be observed less often and consumers will suffer.

These arguments, as the Court noted in *Weyerhaeuser*, remain valid in the case of bidding for inputs. There are procompetitive instances in which a firm may outbid its rivals for access to an input. The law would discourage competition in this sphere if it were to punish firms in those instances. The exclusion of cases in which the bidding firm is able to outbid rivals profitably, which the Court adopted as part of the price-cost test of *Brooke Group*,[22] is a useful way to avoid punishing firms in instances of efficient outbidding.

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[21] Frank H. Easterbrook, The Limits of Antitrust, 63 Tex. L. Rev. 1 (1984).
[22] *Weyerhaeuser*, 127 S. Ct. at 1078.

Hence, although basic economic analysis implies that input predation is potentially more harmful to consumer welfare than is output market predation, and therefore provides some support to the Ninth Circuit's decision, the *Brooke Group* standard remains justifiable in the context of input market predation when error costs are taken in to account. The mere fact that the welfare harms are likely to be greater in the context of input predation is insufficient, by itself, to support the conclusion that the *Brooke Group* standard should be modified in favor of plaintiffs in cases of input market predation. In particular, the first prong of the *Brooke Group* standard, which requires the exclusion of cases in which the bidding firm outbids rivals profitably, may still be the best approach in light of the costs of false convictions.

There is a special case of dual market power setting that could require modification of the first prong of the *Brooke Group* test. That is when the predator begins with market power in the output market and uses predatory bidding to gain monopsony power in the input market. This is the dual market power acquisition scenario in reverse order. In this case, the first prong of the *Brooke Group* test could fail to serve as a useful screen for separating procompetitive and anticompetitive instances of bidding. If the firm has power in the output market, the first stage outcome might be one in which the firm's output price increases during the predatory bidding phase. This might occur because: (1) the firm's marginal cost actually increases as a consequence of bidding up the input price,[23] or (2) because the firm strategically increases its output price in order to evade detection under the first prong of the *Brooke Group* test. In light of this possibility, courts should recognize that when the firm has the ability to increase its output price during the predatory bidding phase, the first prong of the test should not be rigidly applied.[24]

Consider the second prong of the *Brooke Group* standard, the dangerous probability requirement, in light of the basic economic analysis and in light of error costs. The second prong of *Brooke Group* has required an examination of market structure and competition in the relevant market. In the case of input market predation, examination of the output market alone will be insufficient as a screen on case quality. The reason is that a firm may have an incentive to engage in input market predation even when the output market is competitive.

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[23] One can distinguish different input predation scenarios. One is the *lump sum transfer* case, in which the predator pays a lump sum to purchase a stock of inputs or to pay off a supplier. Another is *spot market premium* case, in which the bidder pays a higher price for every unit of the input during the predation phase. These scenarios, and perhaps others, need to be distinguished in a careful analysis of the consequences of predatory bidding.

[24] Blair and Lopatka discuss this scenario and argue that a profit sacrifice test should be applied to the monopolist's actions. Blair & Lopatka, supra note 6, at 66.

In order to avoid the outcome in which the dangerous probability requirement is meaningless as a constraint, courts should interpret the dangerous probability test to require an examination of market structure and competition in both the input and output markets. If both markets are vulnerable to monopolization, then the likelihood that the firm's conduct involved real predation should be viewed as considerably higher than in other scenarios.

To sum up, while basic economic analysis suggests specific ways in which the *Brooke Group* standard should be fine tuned to apply to input market predation, it is insufficient to justify a decision to replace *Brooke Group* with some alternative standard that is more favorable to plaintiffs in the input predation scenario. Given that false convictions can occur in the input predation scenario, and that they can be costly as well, a stronger case must be offered for jettisoning *Brooke Group* than that suggested by the economic analysis of predation incentives.

I am concerned, however, that the Court has not provided a worthy account of the procompetitive benefits of outbidding rivals in the input market. Neither has the Court provided as much detail as it should have in the application of the *Brooke Group* standard to input markets. I will consider both questions in the remaining parts.

B. Information and Prices

Recall that the Court suggested four procompetitive justifications for the outbidding of rivals for access to inputs: (1) mistakes, (2) differentiated impacts of product market demand shocks, (3) greater productive efficiency on the part of the dominant firm, ad (4) hedging against risk. The Court offered these justifications as reasons why conduct that appears to be input predation might be either unavoidable consequences of competition, or beneficial to the economy and to consumers.

At least three of the four justifications offered by the Court are based on information. If you read the Court's list of justifications and ask why each one might explain why one firm profitably outbids another, the most likely explanation in each case is informational asymmetry. This is obviously so in the case of overbidding mistakes, which is a function of the allocation of information across market participants.

Suppose firm *A* outbids firm *B* because it is hedging against the risk of a future shortage of inputs. Why should firm *B* be outbid on this basis? The shortage will affect both firms in the same way. The most likely reason for any difference in bids is that firm *A* possesses different predictions on the future availability of inputs than does firm *B*. Those predictions are likely to be based

on information collected by firm *A* that firm *B* does not have. Of course, firm *A* might outbid firm *B* on the basis of incorrect information.

If market demand shocks affect firms differently, that is likely to be the result of information differences. Some firms will know about the market demand shocks and others may not know. Alternatively, some firms may understand the implications of the market demand shocks better than other firms. Even if products are differentiated, information is probably the key reason demand shocks might affect firms differently in their bidding for inputs. For example, suppose two firms offer differentiated products on the output market while bidding for the same input. Suppose an exogenous change in consumer tastes, say due to immigration, increases the demand for one firm's product relative to the other. This may lead the in-demand firm to outbid its rival (out-of-demand firm) for inputs. But, in this scenario, the inputs have actually increased in value by the extent of the in-demand firm's new bids. The only reason the out-of-demand firm might be outbid is because it cannot afford to pay the new market price, in which case its exclusion from access to inputs is efficient, or because it cannot observe or predict the new market value of the inputs.

These examples suggest an especially important feature of markets that is easy to overlook in the predation context. Prices are signals and stores of information.[25] Whenever antitrust law disrupts the market processes by which prices are established, it threatens to obstruct a core function of the market.

The Court recognizes the importance of price setting in the competitive process. In *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc*.,[26] the Court referred to competitive pricing as the "central nervous system of the economy" and suggested that the per se rule should not be applied unless the challenged agreement threatens that system.[27] This protective view of the role of competitive pricing appears to play some role in the Court's predatory pricing case law. The *Brooke Group* standard is based in part on the concern that false convictions that discourage price cutting decisions would be especially costly because of the importance of those decisions to competition.

The Court's argument in *Weyerhaeuser* fails to get across any sense that decisions to bid up prices, just as decisions to cut prices, play a role in the central nervous system of an economy. Prices are bid up when supply fails to meet demand at preexisting prices. A law that threatens punishment on a market actor who bids prices up would have undesirable consequences.

Prices convey information. While the simple textbook analysis of market prices tells us that prices are bid up so that supply can meet demand, there is an

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[25] On prices and information, see F.A. Hayek, The Use of Knowledge in Society, 35 Am. Econ. Rev. 519 (1945).
[26] 441 U.S. 1 (1979)
[27] Id. at 23.

underlying question of who knows when supply is insufficient to meet demand. When supplies have to be generated in advance of the actual transfer to buyers, who knows when future supply will be unable to meet future demand? Government bureaucrats, lawyers, and economists are not the ones who know. Market participants, who have a direct stake in finding the answers, are the ones who discover when supply is unlikely to meet demand. The price system permits those actors to gain by taking advantage of this information and purchasing inputs, bidding up their prices. The price increases convey information to suppliers that induces them to bring forth greater supply to the market.

The biggest gains for bidding up prices will go to those who discover and act first on information suggesting that current or future supply may be insufficient to meet demand. The price system rewards those who are best suited to find information or predict shortages or excesses of supply. The first one to act bids on inputs before any information of an upcoming shortage has affected prices. When the information begins to spread and input prices rise, the first actor earns the greatest profits from having acted early. In this way, the price system encourages those who are most efficient at discovering information on market conditions to act on that information promptly, thereby communicating their information to the market. The ability of these actors to gain from acting on their private information ensures that their information will be revealed, rather than sat upon and ignored.

Antitrust has not given sufficient weight to the informational role of prices. The tendency of antitrust courts to focus on price cutting as a means of enhancing consumer welfare has taken them away from thinking about the function of prices as signals and conveyors of private information.

I have set out my description of pricing as information in the context of input bidding, but the argument applies to output price setting as well. One could argue that when a firm sets a price for its product, it is also conveying information about what it thinks the market will bear. This argument implies that some instances of alleged predation may reflect the dominant firm's assessment that the demand for its product will decline in the future. For example, the firm may recognize that demand will decline in the future, and decide to cut price in the present in order to maintain its customer base in future periods.

While it is true that the information-conveyance view of price setting applies to output pricing as well as to bidding for inputs, the argument seems especially applicable to the input bidding case. The relationship between information and prices is different in the input bidding and output pricing scenarios.

In the input bidding scenario, the bidding firm does not have direct control over the supply or quantity of the input on the market. This lack of control is obvious when the bidding firm is not a monopsonist. In contrast, when the bidding firm has monopsony power, it enjoys some degree of control over the

quantity of the input. But even in the monopsony setting, the bidding firm still has far less than direct control. The input supplier can always refuse to accept the monopsonist's price. For example, in a monopsonized labor market, the workers could always form a union and convert the monopsony setting into one of bilateral monopoly.

In the absence of direct control over the quantity of the input, the bidding firm is always in the position of having to be concerned about its access to the input. If access to the input is not guaranteed, the bidding firm will have to predict future supply and demand conditions in order to avoid being "caught out" without access to the input. This means that bidding firms have incentives to monitor input markets and collect information on them. The potential scarcity of the input offers a reward to the bidding seller who best predicts the future state of the input market – e.g., whether a shortage or excess appears.

The situation is different for the dominant firm that must determine how to price its own output. The dominant firm seller has direct control over its own quantity. As long as it has access to its inputs and its production process functions, the dominant firm does not confront the risk of being caught out without access to its own product.

Since the risk of being shut down is higher in the input bidding than in the output pricing scenario, the incentive to monitor and to collect information on market conditions is greater in the input bidding scenario. As a result, the connection between information and bidding is probably a bit stronger in the input bidding scenario than in the output-price setting scenario.

The error cost framework of *Brooke Group* is incomplete because it does not explicitly incorporate the informational role of prices. This informational role is especially important in the input bidding scenario. It follows that in thinking about the costs of false convictions for predation, courts should attempt to consider the effects a legal standard governing predation might have on incentives to convey information to markets. Moreover, if one had to identify the central nervous system of the economy, it is most likely to be found in the information role of pricing rather than in the benefits received by consumers from short-run price cutting.

C. Some Implications for the *Weyerhaeuser* Analysis

The Court's analysis in *Weyerhaeuser* is based in part on the rather weak argument that ultimate consumers may not be harmed by input market predation, and that therefore there may be no need to regulate such predation in order to protect consumers. This is not the best choice from the menu of possible arguments, for several reasons.

First, the Court's decision to focus on ultimate consumers rather than suppliers of inputs, as beneficiaries of input predation, may turn out to be a regrettable decision in the long run. If one focuses on suppliers of inputs, one sees that the benefits to those suppliers are entirely analogous to the benefits to ultimate consumers from output price predation. Explicitly recognizing this analogy in the text of the Court's argument (rather than in a single footnote) would have made the argument for the *Brooke Group* standard a bit more persuasive, and aided lower courts in analyzing problems such as this.[28]

Second, the Court's claim that consumer may not be harmed by successful input market predation is questionable. If the input market predation is successful, it will result in some reduction in supply from the monopsony firm – since a monopsonist uses less than the competitive quantity of the monopsonized input. That cutback in supply will reduce consumer welfare, though the effect may be small.[29]

Third, even if the negative effect of input predation on ultimate consumers is trivial, this is hardly an argument in favor of enforcement passivity. The Court's argument, examined closely, is really this: in some cases, input market predation harms consumers greatly; in others, it harms them not much at all. To focus on the "not much at all" case is a reason for enforcement passivity is unpersuasive.

As I have suggested, the "basic economics" case for enforcement passivity in the input predation setting is weak. Input predation appears, on the basis of an economic analysis of predation incentives, to be at least as harmful as output market predation and potentially more harmful. The Court would aid the reasoning of lower courts by recognizing these implications of economic analysis.

The argument for applying the *Brooke Group* standard to input predation is, in the end, not closely connected to basic economic analysis. The argument is mostly based on the error cost framework. And it is at this stage where it appears that the argument in favor of the *Brooke Group* standard is at least as strong, and perhaps stronger, than in the case of output market predation.

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[28] Indeed, as Blair and Lopatka explain, supra note 6 at 37, one can read at least one Supreme Court decision, Mandeville Island Farms, Inc. v. American Crystal Sugar Co., 334 U.S. 219, as explicitly recognizing the statute's protection of the producers surplus earned by suppliers in a competitive market. The Court could have easily cited Mandeville Island Farms as a basis for treating the gains to suppliers during the first stage of a predatory bidding campaign as analogous to the gains to buyers in the first stage of a predatory pricing campaign.

[29] This conclusion contradicts that reached in Salop, supra note 6, at 673. Although the predatory firm may purchase more of the input during the predatory campaign (and even this is not clear, since the predatory firm might simply pay a higher price without purchasing a greater quantity), this strikes me to be short run consideration. In the long term, the successful predator gains monopsony power, which is harmful to the welfare of suppliers and of consumers, though the effect on consumers may be small. For similar points, see Richard O. Zerbe, Jr., Monopsony and the Ross-Simons Case: A Comment on Salop and Kirkwood, 72 Antitrust L. J. 717 (2005).

Input pricing is an important part of the economy's central nervous system. In most instances, it takes place in open competitive markets, and reflects bidders' information on the scarcity of inputs. In order for markets in inputs to function, these bids must communicate information relatively quickly. An antitrust rule that threatens punishment to firms that act quickly to bid up input prices poses a threat to well ordered markets.

VI. Reconciling *Weyerhaeuser* with Labor Antitrust

There is a line of cases involving input market predation known as labor antitrust cases. These are cases in which a union forms an agreement with an employer or group of employers that has the effect of obstructing competition among the employers.[30] Labor is an input into production, and it is by far the most common example of predation in input markets. In some of the cases, the Court has found an antitrust violation. It would have been helpful for the Court to explain the differences between these cases and *Weyerhaeuser*.

Consider *United Mine Workers v. Pennington*.[31] The United Mine Workers made an agreement with one set of employers to set wages at levels that would be prohibitively expensive for competing nonunion employers.[32] The wage agreement was set with the purpose of driving less efficient competitors out of the market.[33] The Court had to determine whether the antitrust laws applied to such an agreement, or whether it fell under the labor exemption to antitrust. The Court held that the antitrust laws applied, affirming a lower court finding that the agreement violated the antitrust laws.[34]

If we step back and look at the most general features of *Pennington*, it looks a lot like the plaintiff's version of the events in *Weyerhaeuser*. In *Pennington,* one group of employers (buyers) made a labor agreement (purchase agreement) that set the wage (price of the input) at a level that would bankrupt rival employers (competing input buyers). The Court did not adopt a high barrier of the sort articulated in *Brooke Group* for the plaintiffs in *Pennington*. Of course, Pennington preceded *Brooke Group*, but the Court has never suggested that the *Brooke Group* standard should be applied to a case like *Pennington*. Is this an instance in which similar cases are being treated differently, or are there differences between *Weyerhaeuser* and *Pennington*?

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[30] For a discussion of the economics of labor antitrust cases, see Oliver E. Williamson, Wage Rates as a Barrier to Entry: The Pennington Case in Perspective, 82 Q. J. Econ. 85 (1968); Keith N. Hylton, Efficiency and Labor Law, 87 Northwestern U. L. Rev. 471, 520-22 (1993).
[31] 381 U.S. 657 (1965).
[32] Id. at 660.
[33] Id.
[34] Id. at 668.

In fact there are important differences, and it may help to clarify the case for or against applying the *Brooke Group* standard to input predation by considering the differences. First, the labor antitrust cases such as *Pennington* involve explicit conspiracies. Antitrust law has applied more plaintiff-favorable standards to conspiracies, and this is widely considered to be justified by the error cost rationale provided long ago by the Court in *Trenton Potteries*.[35]

Setting aside the distinction between conspiracy and unilateral conduct, it is possible to identify other ways in which the type of predation in *Pennington* differs from the predation alleged in *Weyerhaeuser*. In the labor antitrust setting, the union has the power to control the supply of labor inputs. This level of control over the market for inputs is not observed in *Weyerhaeuser*.

Consider an example in which there are two input buyers (*A* and *B*) and two input suppliers (*C* and *D*). Suppose *A* attempts to bid the price of the input up to a level that would bankrupt *B*. Unless there is an agreement between input suppliers *C* and *D*, one of them would have an incentive to sell excess inputs (inputs that will not be purchased by *A*) to *B* at a discount. In addition, the excessive bids offered by *A* will tempt other input sellers to enter the market. Predation is unlikely to be successful under these conditions.

Suppose, however, *C* and *D* form an iron-clad agreement to sell at the same price, which is the level determined by *A*'s excessive bids. Suppose also that *C* and *D* can effectively block entry by competing input suppliers by withholding inputs to any firm that purchases inputs from any other supplier. This scenario is a closer fit to the facts of *Pennington*.

In *Pennington* the agreement between the union and the employer led to the elimination of less efficient firms. If this is viewed under the *Brooke Group* standard, as applied to input predation, then the price-cost test would not be satisfied. In other words, *Brooke Group* requires the plaintiff to show that the input predation led to a period in which marginal cost was driven above price for the predator firm. But this is not the case in *Pennington* because the agreement was designed to eliminate only the less efficient firms. Still, *Pennington* involved a conspiracy, which could justify treating the case differently from one of unilateral conduct.

Suppose the agreement in *Pennington* had been designed to eliminate equally efficient firms. Then the first prong of the *Brooke Group* standard, as applied to input predation, would be satisfied. The second prong of the standard, the dangerous probability requirement, would probably be satisfied too. The reason is that the union in Pennington had the power to block the entry of competing input suppliers. The predatory scheme in Pennington would permit the predating

[35] United States v. Trenton Potteries, 273 U.S. 392 (1927). *Trenton Potteries* provides the error cost rationale for the per illegality rule governing price fixing.

firm to eliminate competitors and to remain in the market relatively free from the threat of entry by competitors.

Pennington permits us to construct a hypothetical case in which the *Brooke Group* standard would most likely be satisfied. By using such examples to distinguish and defend the decision in *Weyerhaeuser*, the Court could have provided useful guidance for lower courts, and answered the critique that the *Brooke Group* standard is essentially a per se legality rule.

V. Conclusion

There is a rigorous basis for concluding that predatory bidding and predatory pricing are analytically distinct, as the Ninth Circuit did when it rejected the *Brooke Group* standard in *Weyerhaeuser*. The incentive to engage in predation, as measured by the potential reward, is greater in the bidding context than in the pricing context. Predatory bidding may lead to a dual market power outcome in which the predator has market power in both the input and the output market. The welfare costs of dual market monopoly are greater than those of single market monopoly.

However, the core rationale for the *Brooke Group* standard is based more on error cost considerations than on an economic analysis of incentives to engage in predation. False convictions are potentially costly to society in their effects on information transmission in bidding markets. There is no obvious reason to believe that false conviction costs in bidding markets are any less worrisome than false conviction costs in output markets.